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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/561,980 | 12/22/2005 | Kazuyuki Mikubo | 081848-0194 | 1508 |
| 22428 7590 05/01/2007 FOLEY AND LARDNER LLP SUITE 500 3000 K STREET NW WASHINGTON, DC 20007 | | | EXAMINER DUVERNE, JEAN F | |
| | | | ART UNIT 2839 | PAPER NUMBER |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/561,980

Applicant(s)

MIKUBO ET AL.

Examiner

Jean F. Duverne

Art Unit

2839

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,7,8,15 and 16 is/are rejected.
- 7) ☒ Claim(s) 3-6,9-14 and 17-19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
- 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
- 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 12/22/05, 6/13/06.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

2. Claims 1, 8-9 and 15¹⁶ are rejected under 35 U.S.C. 102(b) as being anticipated by Kiyotaka (JP 2002-009477).

Kiyotaka's device discloses a cooling device for an electronic equipment, comprising: a cooling panel (3) including a bottom heat radiation plate and a top heat radiation plate, at least one of which is provided with a groove (see fig. 1)), said bottom heat radiation plate and top heat radiation plate being bonded together to form a passage (fig. 1) of refrigerant; and a circulation pump (see abstract) fixed onto said cooling panel to circulate said refrigerant through said passage for radiating heat transferred to said cooling panel, the reinforcement formed in the groove, the reservoir communicating with the hole. The term "for" with the accompanied features as recited in the claims are considered as functional limitations and do not add any patentable weight to the claims limitations.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

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the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2, 9, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kiyotaka (JP 2002-009477).

In regard to claims 2, 7-8, 12, Kiyotaka's device discloses the aforementioned limitations, but fails to disclose the material of which the pump is made of. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the pump made of certain material since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the pump made of certain material in order to meet the system specification and requirement.

In regard to 9, Kiyotaka's device discloses the aforementioned limitations, but fails to disclose the different shapes in the circular portion. It would have been obvious to matter of design choice to have the circular portion of different shape, since such modification would have involved a mere change in shape of a component. A change in shape is generally recognizing as being within the level of ordinary skill in the art. In re Dailey, 149 USPQ 47 (CCPA 1976). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the circular portion of different shape in order to meet the system specification and requirement.

Conclusion

Claims 3-6, 10-14, 17-19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Prior art fails to disclose the combination features the pump housing being fixed onto the cooling panel so that the discharge port and a suction port are aligned with said inlet port and said outlet port, the check valve being fixed onto the member which is detachably attached onto said pump housing; the piezoelectric vibration plate includes a pair of first piezoelectric ceramic elements not polarized, the pair of second piezoelectric ceramic elements sandwiching therebetween said first piezoelectric ceramic elements and polarized in opposite directions to each other, and the pair of third piezoelectric ceramic elements disposed outside said second piezoelectric ceramic elements and not polarized, and wherein each of said second piezoelectric ceramic elements has a layered structure including a plurality of ceramic layers; the volume of said reservoir below said apex of said taper portion is larger than a volume of said reservoir above said apex of said taper portion, and said refrigerant fills said reservoir so that the liquid level is located above said apex of said taper portion; the protrusion having an area smaller than a cross-sectional area of said branch hole is formed on top of said reservoir at the position opposing said branch hole; or the portion of said passage is replaced by the micro-channel structure including a plurality of narrow grooves having a width smaller than a width of said groove and with the rest of the claims limitations.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jean F. Duverne whose telephone number is (571) 272-2091. The examiner can normally be reached on 9:00-7:30, Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, TC Patel can be reached on (571) 272-2098. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JFD

04/28/2007



Jean F. Duverne
Primary Examiner
Art Unit 2839